Artemisia tridentata - Atriplex confertifolia Shrubland

COMMON NAME   Wyoming Big Sagebrush - Spiny Saltbush Shrubland
SYNONYM   Big Sagebrush - Shadscale
PHYSIOGNOMIC CLASS   Shrubland (III)
PHYSIOGNOMIC SUBCLASS   Evergreen shrubland (III.A)
PHYSIOGNOMIC GROUP   Microphyllous evergreen shrubland (III.A.4)
PHYSIOGNOMIC SUBGROUP   Natural/Semi-natural (III.A.4.N)
FORMATION   Microphyllous evergreen shrubland (III.A.4.N.a)
ALLIANCE   ARTEMISIA TRIDENTATA SSP. WYOMINGENSIS SHRUBLAND ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL   2

USFWS WETLAND SYSTEM

RANGE
Theodore Roosevelt National Park
The Wyoming Big Sagebrush - Spiny Saltbush Shrubland is widespread throughout Theodore Roosevelt NP. It occurs as a fairly heterogeneous mixture of vegetation on the sparsely vegetated badlands and many of the slopes and ridges. These shrublands occur in close association with the Badlands Sparse Vegetation Complex and the *Artemisia tridentata* spp. *wyomingensis / Pascopyrum smithii* Shrubland.

Globally
This sagebrush shrubland occurs in the northwestern Great Plains (especially in badlands regions).

ENVIRONMENTAL DESCRIPTION
Theodore Roosevelt National Park
This shrubland is found throughout Theodore Roosevelt NP on moderately steep to steep slopes of nearly all aspects, with the possible exception of steep north facing slopes dominated by *Juniperus scopulorum* and the unvegetated steep south facing slopes. The soils are undeveloped but slightly less eroded than the Badlands Sparse Vegetation Complex.

Globally
Within badlands landscapes this type is found on shallow, heavy-textured, and highly erosive soils, and on terrace/alluvial fan landscapes it is associated with excessively-drained substrates, often of a calcareous nature. Soils have consistently high pH and high conductivity values (within the range found for some *Sarcobatus vermiculatus* communities) and are derived from sedimentary parent materials. In badland settings, occupied slopes range from shallow to steep (>80%) with all aspects represented. For Montana sites the known range of elevation is from 3,000 to 4,700 ft. Landscape position and site parameters have been cursorily described, at best, for the Wyoming and North Dakota occurrences.

MOST ABUNDANT SPECIES
Theodore Roosevelt National Park

Stratum	Species
Shrub	*Artemisia tridentata, Atriplex confertifolia, Gutierrezia sarothrae*
Herbaceous	*Pascopyrum smithii, Bouteloua gracilis, Muhlenbergia cuspidata*

Globally

CHARACTERISTIC SPECIES
Theodore Roosevelt National Park
Artemisia tridentata, Atriplex confertifolia, Gutierrezia sarothrae

Globally

VEGETATION DESCRIPTION
Theodore Roosevelt National Park
Species composition of this matrix is generally quite consistent with *Artemisia tridentata* as the major species of varying densities. Total foliar cover usually ranges from 20-40% and the plants are typically less than 0.5 m in height. *Atriplex confertifolia, Gutierrezia sarothrae,* and *Sueda depressa* are the usual secondary shrub species. The herbaceous layer consists primarily of *Bouteloua gracilis, Pascopyrum smithii,* and *Muhlenbergia cuspidata.*

Globally
The visual aspect of this association, especially where it occurs on badlands and eroded surfaces, is often that of a depauperate shrubland. Though shrub canopy cover for the modal expression of the type is less than the 25 percent required for a shrubland descriptor, the cover of all other layers is even less, rendering this type a shrubland. *Atriplex tridentata ssp. wyomingensis* and *Atriplex confertifolia* constitute from 5 to 25 percent combined cover, with *Artemisia tridentata* strongly dominant. In the Bighorn Basin and Bighorn Sedimentary Mountains Sections of Montana, other shrubs with greater than 50 percent constancy (but <5 percent canopy cover) include *Atriplex nuttallii, Sarcobatus vermiculatus, Krascheninnikovia (= Ceratoides) lanata*, and *Chrysothamnus nauseosus*. Subshrubs *Eriogonum brevicaule* and *E. pauciflorum* are relatively constant on a regional basis. There is little consistency to the composition of the herbaceous layer, which varies site to site and evidences regional variation as well. The graminoids constitute the next most abundant component, but their combined cover usually does not exceed 5 percent; those grasses with the highest constancy are *Oryzopsis hymenoides, Stipa comata*, and *Aristida purpurea. Phlox hoodii, Sphaeralcea coccinea* and *Opuntia polyacantha* appear to have the highest constancy values, but seldom exceed 1 percent cover. ^If one accepts the descriptions and data reported in three separate papers (Brown 1971, Knight et al. 1987, DeVelice and Lesica 1993) as representing variants of one given type, then there is considerable vegetation, habitat and geographic variability manifest within this type. This community usually occurs as small patches but ranges to large patches on less precipitous terrain. The eastern Montana badland expressions, as well as those of Bighorn Canyon National Recreation Area, tend to have lower total canopy cover (13 percent average) with widely spaced individuals of the diagnostic species *Artemisia tridentata (ssp. wyomingensis*, G.P. Jones pers. comm. 1998) and *Atriplex confertifolia*. Conversely, the Pryor Mountains expressions average upwards of 30 percent canopy cover for the shrub component alone. A melange of undergrowth forbs is present with the representation depending upon the local flora, however *Opuntia polyacantha* is common to all expressions of the type, as are the grasses, *Oryzopsis hymenoides, Aristida purpurea* and *Stipa comata*.

CONSERVATION RANK   G4. Though the type occurs in small patches and its area of occupancy is small, it is apparently secure due to both its inaccessible landscape position, lack of palatable plants and lack of extractable resources.

DATABASE CODE   CEGL000993

COMMENTS
If one accepts the two types listed by Brown (1971) as equivalent to this type, then some stands may have *Atriplex confertifolia* as a dominant and *Artemisia tridentata* as the subdominant, and other stands may have them reversed.

REFERENCES